



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/750,873

12/28/2000

Les Humphrey

476-1984

8475

7590

12/29/2004

William M. Lee, Jr.

LEE, MANN, SMITH, MCWILLIAMS, SWEENEY & OHLSON

P.O. Box 2786

Chicago, IL 60690-2786

EXAMINER

TSE, YOUNG TOI

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,873

Applicant(s)

HUMPHREY, LES

Examiner

YOUNG T. TSE

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 032601;022403.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-22) in the reply filed on 07 October 2004 is acknowledged.
2. Claims 23-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07 October 2004.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the phase shifter as recited in claim 17 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference sign "90" is not shown in Figure 1 as mentioned on page 8, line 26 in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: the reference sign "402" shown in Figure 4 is not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or

amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because no arrow flows are indicated in the flow charts of Figures 4-7. Further, in Figure 4, block element 400, "over carrier" should be "over a carrier" and block element 402, "replicate of signal" should be "replicates of the signal". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement

Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: On page 7, line 30, "40-68" should be "30-60"; page 10, lines 16 and 25, "an graph" and "carriers" should be "a graph" and "carriers 402" respectively; and page 11, line 21, "702;" should be "702; and". For the formality of the application under the present office practice, applicant(s) is required to replace "Claims" with "I or We Claim", "The Invention Claimed Is" (or the equivalent) before the Claims part of the specification of the instant application. See MPEP 608.01(m). Appropriate correction is required.

Claim Objections

7. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 3, 3 and 4-24 have been renumbered claims 3-25, respectively since two set of claim 3 is provided. Claims 3, 11-19 and 22 are objected to because of the following informalities:

In claim 3, lines 1 and 4, "steps" and "all carriers" should be "step" and "all available carrier groups", respectively.

In claim 11, lines 4 and 6, "carriers; and" and "carriers;" should be "carriers;" and "carriers; and", respectively.

In claim 12, lines 1 and 2, "a wireless" and "a transmitter" should be "the wireless" and "the transmitter", respectively for clarity.

In claim 13, lines 1-2, "a transmitter" should be "the transmitter" for clarity.

Claims 14-17 are depended upon the independent claim 11.

In claim 19, lines 1-2, "a carrier in one of the carrier groups" should be "a first carrier in one of the available carrier groups".

In claim 22, line 7, "the carrier groups" should be "the available carrier groups".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18 and 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 18 recites a multi-carrier transmission signal comprising simultaneous transmission of a modulated symbol over

all available carrier groups. However, a signal itself is a non-status subject matter or unpatentable without any useful or specific use of the signal as recited in claims 18 and 19.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 1-25 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification fails to explain the operation of a transmitter circuit in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, such as, how to identify the carrier groups and transmit a replicate of the symbol of the carrier groups as recited in claims 1-17 and 20-22.

Claim 18 recites a multi-carrier transmission signal comprising simultaneous transmission of a modulated symbol over all available carrier groups. Wherein the simultaneous transmission is considered as a single means.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth

rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See MPEP 2164.08(a).

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-10,13-17 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites a method for transmitting symbols ... for transmission over a carrier group of pre-determined size. However, the body of the claim does not recite what sizes for all the available carrier groups. Also see claims 20 and 22.

The claimed subject matter of claim 3 is not understood.

In claim 4, line 1, the phrase "all replicates" is indefinite since claim 1 recites a (or one) replicate only.

In claim 5, line 3, the phrase "a second carrier" is indefinite since no first carrier has been recited in the precedent claims.

In claim 6, line 1, the phrase "all signal portions" is indefinite since claim 5 recites a (or one) signal portion only.

Wherein claims 2 and 7 are depended upon claim 1.

Claim 8 also recites a carrier group of known. However, the claim does not recite what sizes for all the available carrier groups. Also see claim 21.

In claim 9 (line 2), claim 10 (line 3), claim 15 (line 2), claim 16 (lines 2 and 3), the phrases "DSL", "G.Lite", and "G.DMT" are undefined.

The claimed subject matter of claim 13 is already recited in claim 11.

The claimed subject matter of claims 14 and 15 is not understood.

Claim 12 is depended upon claim 11.

In claim 17, lines 2 and 3, the phrases "the transmission phase" and "the available carrier" both lack antecedent basis.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Braun et al..

Braun et al. (U.S. Patent No. 4,809,296) discloses a transmitter circuit shown in Figure 2 for transmitting data via a power system line of a power supply system by carrier frequency modulation to a receiver circuit shown in Figure 4.

With respect to claim 11, the transmitter comprises a modulator 8 which corresponds to the modulator for modulating symbols over a pre-determined number of carriers; a frequency selection circuit 10 and a carrier frequency generator 11 which correspond to the carrier allocator to identify all available carrier groups; and symbols replicator 7 which corresponds to the replicator to output a replicate of each of the symbols on each of the carrier groups.

With respect to claim 12, the transmitter circuit of Figure 2 and the receiver circuit of Figure 4 are integrated in a modem.

With respect to claim 13, the transmitter circuit of Figure 2 is integrated in a multi-carrier communication system.

16. Claims 1-2, 4, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hethuin et al..

Hethuin et al. (U.S. Patent No. 6,625,174 B1) discloses a transmitter circuit in Figure 4 and a method for transmitting data packets having a heading followed by a data field.

With respect to claims 1-2, 4, 18 and 20, the data field is transmitted by groups of symbols. According to the OFDM technique, sub-carriers modulated by the groups are generated. See the abstract; column 2, lines 36-47 and column 3, lines 34-49.

Conclusion

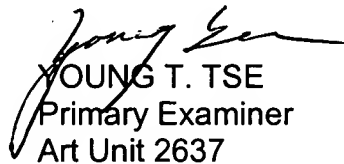
17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yonge, III et al. (U.S. Patent No. 6,442,129 B1) is made of record as describing a scheme for identifying usable carriers for a particular modulation type and selecting, if possible, a modulation type for modulation of OFDM symbol block associated with data packets in a standard transmission mode based on data channel condition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday and Wednesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


YOUNG T. TSE
Primary Examiner
Art Unit 2637